

Thermal Conductivity of Solid and Liquid Unbranched Alkanes in the C₁₆ to C₁₉ Range During Phase Transition

R. Holmen and M. Lamvik
Norwegian University of Science and Technology
Trondheim, Norway

Wax build up inside pipelines and other process equipment is a serious problem during transportation and production of oil. To be able to predict the wax precipitation, it is desirable to have as good knowledge as possible of the physical parameters.

This paper presents thermal conductivities for both solid and liquid unbranched alkanes ranging from C₁₆ to C₁₉. The thermal conductivities are measured with a method which gives both liquid and solid thermal conductivities at the temperature of phase transition.

An assessment of the error of the method has been performed. The measurements of solid conductivities are in accordance with measurements reported previously. Liquid conductivities are higher than extrapolated values from the literature, but this is believed to be caused by incipient solidification.